

DegreeWorks Application

Software Requirements Specification



CSCE247: Software Engineering

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MSJN

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1. Introduction

Purpose

Approximately, 1 in 1 students expressed dissatisfaction with their schools' preparedness for post-graduation employment, often because of a lack of awareness about their options until it becomes too late. In response, we aim to develop an application relieving the stress of navigating school curriculum. Our user-friendly interface simplifies the planning and organization process offering features such as displaying current and past courses, future advisement, and term base recommendations. This application not only equips students for the future job market, but also encourages them to look at a broader view past their college career.

Source: <https://www.bestcolleges.com/news/analysis/majority-of-college-students-find-difficulty-staying-interested-in-classes/>

2. Stakeholders

- The client/investors
- University Students
 - Undergraduate
 - Graduate
 - Transfer students
 - Exchange students
- Advisors

Personas



Sarah Rollins
Computer Information
Systems Student

Age: 19 years	Hometown: Charleston, SC
Sex: Female	Education: Undergraduate

BIOGRAPHY

Sarah is a rising junior at the University of South Carolina. She is majoring in Computer Information Systems. Some of her hobbies are reading, going to the gym, and listening to music. She is involved in many organizations on campus that contribute to both her academic and social life.

FRUSTRATIONS

Sarah believes that the current program UofSC uses, DegreeWorks, can be confusing to use. This leads her to not utilize the program as much. She wants the university to incorporate a more user-friendly program that will allow her to complete her goals.

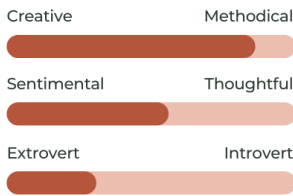
GOALS

Sarah wants to be able to easily view the past, current, and future classes she will have to take. She wants to be able to efficiently plan when she should take certain classes, and how many she has left to take. She would also like to be able to see her GPA and calculate her future GPA

LIKES

Reading
Painting
Music

PERSONALITY



SKILLS



HOBBIES





Whitney Lee

Academic Advisor

Age: 35 years

Country United States

Sex: Female

Education: M.S. in Computer Engineering

BIOGRAPHY

Whitney Lee is an alumni from the University of South Carolina who has been working abroad up until she was offered to become a academic advisor and a chance of returning to her hometown. She will be advising students with a major in Computer Information Systems (CIS), Computer Science (CS), and Computer Engineering (CE). Her hobbies include yoga, reading, coding, and attending the football games

FUSTRATIONS

Whitney believes that the current degree works at USC is outdated. She also believes it needs some features added to it to enhance the student's experience when they are on the site. She believes the best option is to create a new degree works site from the ground up that will make the site pleasant for advisors and students.

GOALS

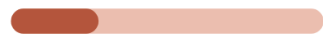
Whitney wants to make sure her advisees are having a great experience at USC while at the same time being on the right track to completing their degree within the four years they spend at USC. She hopes to help USC's College of Engineering and Computing earn the reputation as one of the greatest programs in the nation.

LIKES

Reading
Yoga
Going to USC Football Games
Coding

PERSONALITY

Creative Methodical



Sentimental Thoughtful



Extrovert Introvert



SKILLS

Internet ★★★★★

Coding ★★★★★★

Design ★★★★★★

Social networks ★★★★★★

INTEREST AND HOBBIES



TRAVEL



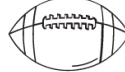
BUSINESS



READING



YOGA



FOOTBALL



Ethan Castro

Sophomore at UofSC

Age: 20 years

Country: United States

Sex: Male

Education: High School

Marital status: Single

Occupation: Full-time College Student

BIOGRAPHY

Ethan is your average second-year computer science student. He especially struggles with finding electives that satisfy his major requirements and also have convenient times and good professors

SHOPPING HABITS

Ethan can be found frequently browsing Amazon and Newegg for the latest computer parts. He can also be found at the local GameStop. Also, if there is ever a Micro Center nearby, you bet he will be there

GOALS AND OBJECTIVES

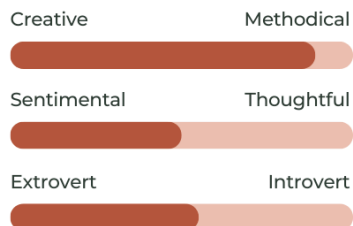
- Graduate on time
- Take interesting classes
- Take classes that satisfy his major
- Take classes that are at a reasonable time
- Easily find good professors

SOCIAL NETWORKS

Use social networks at work



PERSONALITY



SKILLS



TASTES AND HOBBIES



GAME



MATH



TRAVEL



BUSINESS



TECH

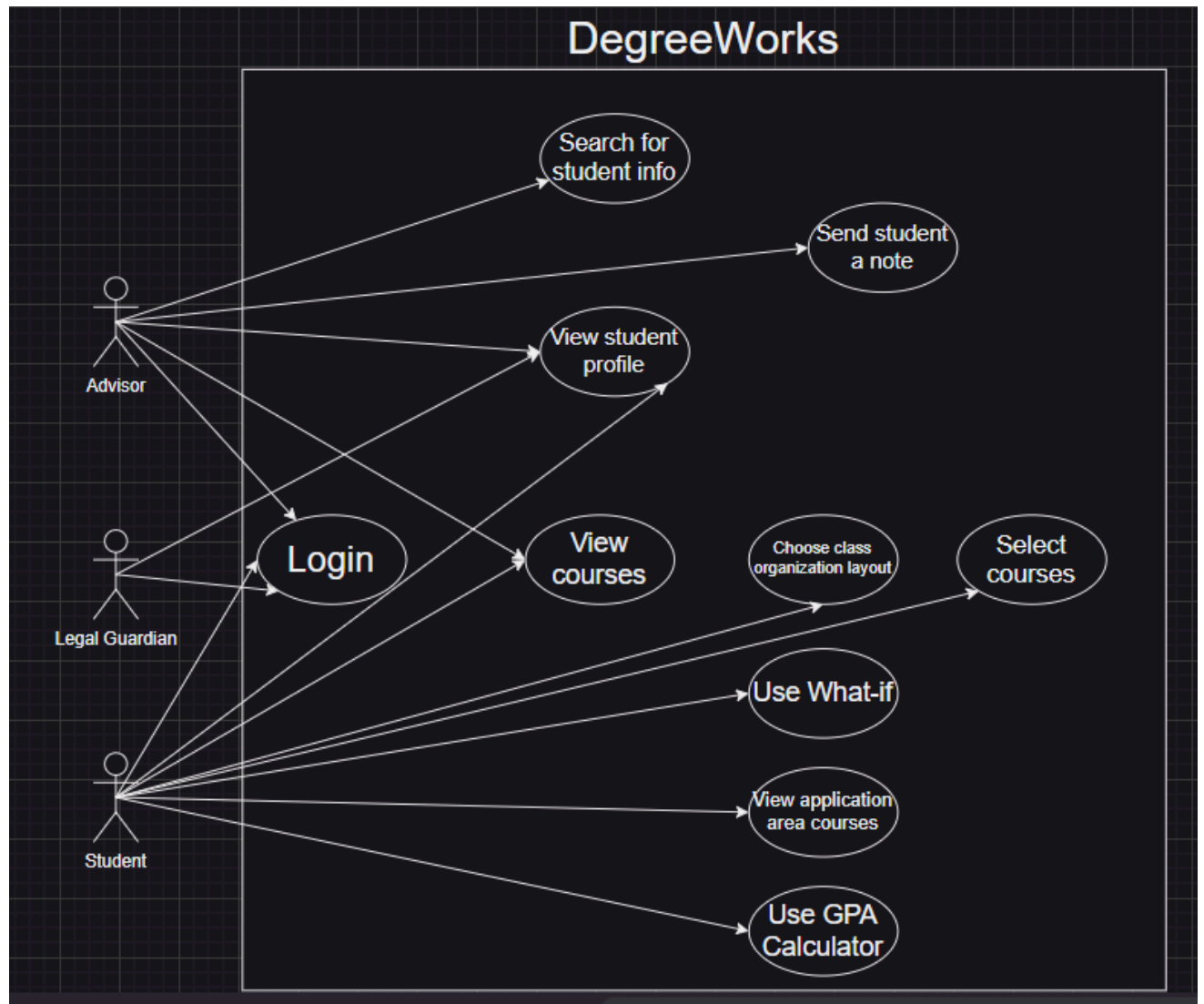
3. Constraints

- **Time Constraints**
 - This project has to be completed within
- **Technical Constraints**
 - Code must be done in Java
 - Program must be accessible on variety of different devices (e.g. laptop, PC, mobile device)
- **Scheduling Constraints**
 - Due to being full time students, we have limited times to meet
- **Monetary Constraints**
 - This project has a budget of \$0

4. Overall Description

Design for widespread adoption across universities, this application aims to enhance the educational experience for both students and faculty. Accessible through mobile and personal devices users can easily plan and organize their classes according to their set requirements. This platform offers a range of applications including ratings, direct communication, encouraging users to expand their reach, and exercise greater control over their academic decisions. This tool not only helps user navigation, but also creates more engagement and takes control of their own curriculum.

5. Business Use Cases



6. Functional Requirements

Requirements Spreadsheet

7. Non-Functional Requirements

- Look and feel requirements
 - The user will be able to access the system through a beginner friendly interface that will be easy to read and use.
- Usability requirements

- The system will have a variety of functions that will be easy to use as well as helpful.
- **Performance requirements**
 - The system shall be able to run on any electronic device with an internet connection.
- **Maintainability and support requirements**
 - The system shall be supported by any desktop operating system.
- **Security requirements**
 - The user's information shall be stored securely.
- **Cultural requirements**
 - The system shall serve as a tool for students and advisors to predict the path of the student.
- **Legal Requirements**
 - The system shall adhere to the university, state, and federal laws.

9. Competitive Analysis

	University of South Carolina Registration
Strengths	<p>Allows users to choose from multiple options, including viewing current/previous registration information, planning schedules for upcoming semesters, and browsing current classes. Easily allows users to transfer their schedule planner information over to actual registration.</p> <p>Also provides users with the ability to view registration holds/notices, and to view important academic and refund deadlines. It also works with the different campuses of UofSC.</p> <p>Users can also access specific information on classes. This includes the instructor, amount of seats in the class, availability, time, and location. The program will also notify the user if the class will have a time conflict with other classes. Features filters that</p>

	allow the user to customize their options.
Weaknesses	<p>Tends to be overloaded and shutdown during registration times due to high demand of the program. Due to this many users have expressed frustration with the university.</p> <p>The schedule planner does not always show which classes are full until the user has already tried to add the class. This causes the user to have to manually search for a different class, which can create stress.</p> <p>The formatting is difficult to use on mobile devices such as only being able to see the user's schedule information, but not the classes while browsing.</p>
Audience/Focus	This program was created for the University of South Carolina students to register and help plan their classes for current and future semesters.

	University of South Carolina Major Maps
Strengths	<p>Does not require a password, username, two factor authentication and/or traversing through multiple parts of Self-Service Carolina to be accessed. This saves the students a significant amount of time.</p> <p>These forms can be digital or physical. Students can go online and save the form as a PDF or print it out and utilize it the way they desire. They can access the form through files and/or pull the printed one from their binder.</p> <p>Major Maps may be easier to comprehend than going to the Degreeworks site. It provides a general outline of the next four years for the student. It also provides additional information on the courses they will be taking, such as the Carolina Core courses, what foreign languages they can take, liberal arts options, etc.</p>
Weaknesses	<p>If a transfer student has classes from another institution, it will not show when and what courses they can be substituted for. So, if a student from Midland Technical College enrolls into the University of South Carolina and took a computer science course that could replace one. It would be difficult to figure out if it can replace a course on the form.</p> <p>These forms are not-adjustable for students who would like to fast</p>

	<p>track. They normally utilize a suggested eighth semester plan. Thus, students may find it rather difficult to maneuver through their degree and may end up staying longer than they anticipated.</p> <p>It does not show what other majors and minors a student can qualify for as they pursue their degree. A student having knowledge of what other degrees they complete in their four years can lead to them getting more out of their education while saving money simultaneously.</p>
Audience/Focus	<p>These forms were designed for the University of South Carolina students and advisors. It is used to track the classes the students have and need to complete to achieve their degree. It will also describe the type of courses they can take.</p>

	Degree Works
Strengths	<p>Accessible by every UofSC student via Self Service Carolina, including satellite campuses.</p> <p>Shows requirements for your degree in great detail, such as classes you have already taken, requirements that have yet to be fulfilled, and which classes you can take to fulfill a requirement.</p> <p>Allows partial communication with your advisor. They can leave notes from advisement that tell you what to register for, and it can be seen right from Degree Works.</p> <p>Allows you to see what what your progress towards a different majors would be like if you switched majors</p>
Weaknesses	<p>The interface looks very complicated and isn't exactly intuitive</p> <p>Despite being accessible via any modern web browser, the interface is not optimized for mobile at all.</p> <p>It shows everything that can be used to complete a requirement, but it doesn't help you narrow down your options based on any preferences.</p> <p>It doesn't really tell you which order you should be taking classes to fulfill your requirements.</p> <p>For requirements that have many different ways to fulfill it, there's</p>

	no way to prioritize classes that have good schedules or have good professors
Audience/Focus	Degree Works is a great tool for seeing the progress you've made at a glance and what requirements still need to be completed, However, it isn't the greatest for choosing specific classes and knowing the order to pick them, at least not without the help of an advisor. Additionally, it doesn't help you narrow down classes based on factors such as section, schedule, and professor. It is purely for finding which classes can fulfill your requirements, but not actually for registering.

Summary

	Strengths	Weaknesses	Focus
University of South Carolina Registration	<ul style="list-style-type: none"> + Contains many features + Offers other add ons other than academic + Accessible to other locations 	<ul style="list-style-type: none"> - Easy to be overloaded with many users - Unable to provide up to date information - Limited device options 	Students of South Carolina wanting to register for classes
University of South Carolina Major Map	<ul style="list-style-type: none"> + Accessible to all not just user and password + Offer different ways to display + Simple and easy to understand 	<ul style="list-style-type: none"> - Unable to show substitutions or options for student out of the university - Lack of flexibility due to set schedule - Limited listings 	All student curious of the curriculum and advisors
Degree Works	<ul style="list-style-type: none"> + Detailed information for your major + Open for Communication for help + Good visuals to see how much is progressed 	<ul style="list-style-type: none"> - Complicated to comprehend - Does give any preference based on user - Lack of features 	Students wanting to see how far they need to go and progress during the college career

Based on the different kinds of similar applications, we have gained valuable knowledge about their strengths and weaknesses. Our approach is to create an application that

satisfies all the conditions comprehensively. Our platform aims to provide students with personalized and in-depth information about their upcoming classes while incorporating decision making features, while still being easy to use. We acknowledge that our application may currently lack the quality of the older applications that have had the opportunity to learn from the mistakes over time. The goal is to make balance by building upon the foundations of the degree work design, offering a stronger base and additional features catered to guide students based on their preferences. Ultimately, our objective is to relieve the stress associated with preparing for the future by providing a tool that caters to the needs of students throughout their entire academic and professional career.